

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claim 1 (currently amended): A monitoring device, for allowing a processor to monitor a value of a parameter derived from an analog signal, the monitoring device comprising:

an analog-digital converter, for producing a digital signal corresponding to the analog signal;

a logic unit, for obtaining ~~a~~ at least one value of said parameter, based on the digital signal; and

an output register, accessible by the processor unit, the register containing the ~~at least one said obtained~~ value of said parameter ~~obtained by said logic unit.~~

Claim 2 (currently amended): A monitoring device as claimed in claim 1, wherein the monitoring device further comprises means for setting a threshold value for said parameter, and for sending a signal to said processor when the ~~a parameter value contained in the output register of the parameter~~ reaches the threshold value.

Claim 3 (currently amended): A monitoring device ~~as claimed in claim 1, wherein: said monitoring device is adapted~~ for connection to a battery to allow a processor to monitor:

~~said parameter derived from said analog signal comprises~~ a voltage supplied by the battery, the monitoring device comprising:

~~an analog-digital converter, for producing said digital signal comprises~~ a digital signal stream, corresponding to successive measured values of the battery voltage;

~~an output register, accessible by the processor unit, the said output register containing contains~~ the value of at least one output parameter derived from said signal stream; and

a said logic unit[[,]] being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

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Claim 4 (original): A monitoring device as claimed in claim 3, wherein the register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 5 (original): A monitoring device as claimed in claim 3, wherein the register contains the minimum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 6 (original): A monitoring device as claimed in claim 3, wherein the register contains the average value of the battery voltage supplied over a fixed period.

Claim 7 (currently amended): A monitoring device as claimed in claim 1, wherein:  
said monitoring device is adapted for connection to a battery to allow a processor to monitor;

said parameter derived from said analog signal comprises a charging current supplied to the battery, ~~the monitoring device comprising:~~

~~an analog-digital converter, for producing said digital signal comprises~~ a digital signal stream, corresponding to successive measured values of the charging current;

~~an output register, accessible by the processor unit, the said output register containing contains~~ the value of at least one output parameter derived from said signal stream; and

a said logic unit[[,]] being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 8 (original): A monitoring device as claimed in claim 7, wherein the register contains the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

Claim 9 (original): A monitoring device as claimed in claim 7, wherein the register contains the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

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Claim 10 (original): A monitoring device as claimed in claim 7, wherein the register contains the average value of the charging current supplied over a period.

Claim 11 (original): A mobile communications device, comprising a monitoring device as claimed in claim 7, wherein the processor is a processor of the mobile communications device.

Claim 12 (currently amended): A mobile communications device, comprising a ~~processor, and a monitoring device, for connection to a battery of said device to allow the processor to monitor a voltage supplied by the battery, the monitoring device comprising:~~   
~~an analog-digital converter, for producing a digital signal stream, corresponding to successive measured values of the battery voltage;~~  
~~an output register, accessible by the processor unit, the register containing the value of at least one output parameter derived from said signal stream; and~~  
~~a logic unit, for updating the value of the or each parameter stored in the register as required in response to the digital signal stream monitoring device as claimed in claim 3,~~  
wherein the processor is a processor of the mobile communications device.

Claim 13 (original): A mobile communications device as claimed in claim 12, wherein the register contains the maximum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

Claim 14 (original): A mobile communications device as claimed in claim 13, wherein the maximum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

Claim 15 (original): A mobile communications device as claimed in claim 13, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored maximum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

Claim 16 (original): A mobile communications device as claimed in claim 12, wherein the register contains the minimum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

Claim 17 (original): A mobile communications device as claimed in claim 16, wherein the minimum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

Claim 18 (original): A mobile communications device as claimed in claim 16, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored minimum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

Claim 19 (original): A mobile communications device as claimed in claim 12, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the register contains a first minimum value of the

battery voltage supplied over a period while said internal signal is being produced, and a second minimum value of the battery voltage supplied over a period while said internal signal is not being produced.

Claim 20 (currently amended): A monitoring device as claimed in claim 1,  
wherein:

said monitoring device is adapted for connection to a battery to allow a processor to monitor;

said parameter derived from said analog signal comprises a temperature, the monitoring device comprising:

~~an analog-digital converter, for producing~~ said digital signal comprises a digital signal stream, corresponding to successive measured values of the temperature;

~~an output register, accessible by the processor unit, the~~ said output register containing contains the value of at least one output parameter derived from said signal stream; and

~~a~~ said logic unit[[],] being adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 21 (original): A monitoring device as claimed in claim 20, wherein the register contains the maximum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 22 (original): A monitoring device as claimed in claim 20, wherein the register contains the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 23 (original): A monitoring device as claimed in claim 20, wherein the register contains the average value of the temperature supplied over a fixed period.

Claim 24 (currently amended): A method of monitoring a value of a parameter derived from an analog signal, the method comprising:

producing a digital signal corresponding to the analog signal;  
obtaining ~~a at least one~~ value of said parameter, based on the digital signal; and  
storing ~~the at least one said~~ obtained value in an output register, accessible by a processor unit.

Claim 25 (original): A method as claimed in claim 24, further comprising setting a threshold value for said parameter, and for sending a signal to said processor when the value of the parameter reaches the threshold value.

Claim 26 (currently amended): A method of monitoring as claimed in claim 24, wherein:

said parameter comprises a voltage supplied by a battery, ~~the method comprising:~~  
said digital signal comprises producing a digital signal stream, corresponding to successive measured values of the battery voltage; and  
storing ~~the value of at least one said obtained value comprises~~ storing at least one output parameter value derived from said signal stream in an said output register, accessible by a processor unit, and  
~~updating the value of the or each parameter stored in the register as required in response to the digital signal stream.~~

Claim 27 (currently amended): A method as claimed in claim 26 47, wherein the register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 28 (currently amended): A method as claimed in claim 26 47, wherein the register contains the minimum value of the battery voltage supplied over a period since the register was last accessed by the processor.

Claim 29 (currently amended): A method as claimed in claim 26 47, wherein the register contains the average value of the battery voltage supplied over a fixed period.

Claim 30 (currently amended): A method of monitoring as claimed in claim 24, wherein:

said parameter comprises a charging current supplied to a battery, the method comprising:

said digital signal comprises producing a digital signal stream, corresponding to successive measured values of the charging current; and

storing the value of at least one said obtained value comprises storing at least one output parameter value derived from said signal stream in an output register, accessible by the processor unit; and

updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

Claim 31 (currently amended): A method as claimed in claim 30 48, comprising storing in the register the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

Claim 32 (currently amended): A monitoring device method as claimed in claim 30 48, comprising storing in the register the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

Claim 33 (currently amended): A method as claimed in claim 30 48, comprising storing in the register the average value of the charging current supplied over a period.

Claim 34 (currently amended): A method of monitoring as claimed in claim 24, wherein:

said parameter comprises a temperature, the method comprising:

said digital signal comprises producing a digital signal stream, corresponding to successive measured values of the temperature; and

storing the value of at least one said obtained value comprises storing at least one output parameter value derived from said signal stream in an output register, accessible by a processor unit; and

~~updating the value of the or each parameter stored in the register as required in response to the digital signal stream.~~

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Claim 35 (currently amended): A monitoring devicee method as claimed in claim 34 49, comprising storing in the register the maximum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 36 (currently amended): A monitoring devicee method as claimed in claim 34 49, comprising storing in the register the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

Claim 37 (currently amended): A monitoring devicee method as claimed in claim 34 49, comprising storing in the register the average value of the temperature supplied over a fixed period.

Claim 38 (new): A monitoring device as claimed in claim 1, wherein said digital signal comprises a digital signal stream, and said logic unit adapted for updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 39 (new): A monitoring device as claimed in claim 1, wherein the register contains the maximum value of the parameter supplied over a period and the average value of the parameter supplied over a period.

Claim 40 (new): A monitoring device as claimed in claim 39, wherein the maximum value of the parameter supplied over a period is updated at a first rate, and the average value of the parameter supplied over a period is updated at a second rate slower than the first rate.

Claim 41 (new): A monitoring device as claimed in claim 1, wherein the register contains the minimum value of the parameter supplied over a period and the average value of the parameter supplied over a period.

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Claim 42 (new): A monitoring device as claimed in claim 41, wherein the minimum value of the parameter supplied over a period is updated at a first rate, and the average value of the parameter supplied over a period is updated at a second rate slower than the first rate.

Claim 43 (new): A monitoring device as claimed in claim 1, wherein the register contains the maximum value of the parameter supplied over a period since the register was last accessed by the processor.

Claim 44 (new): A monitoring device as claimed in claim 1, wherein the register contains the minimum value of the parameter supplied over a period since the register was last accessed by the processor.

Claim 45 (new): A monitoring device as claimed in claim 1, wherein the register contains the average value of the parameter supplied over a fixed period.

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Claim 46 (new): A method as claimed in claim 24, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

*h* Claim 47 (new): A method as claimed in claim 26, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

*All end* Claim 48 (new): A method as claimed in claim 30; comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 49 (new): A method as claimed in claim 34, comprising updating the value of the or each parameter contained in the register as required in response to the digital signal stream.

Claim 50 (new): A mobile communications device, comprising a monitoring device as claimed in claim 20.

Claim 51 (new): A mobile communications device as claimed in claim 12, said monitor monitoring a parameter derived from a second analog signal corresponding to a charging current supplied by the battery, wherein:

    said second analog signal is digitized by said analog-digital converter for producing information in said digital signal stream corresponding to successive measurements of the charging current;

    said output register contains values of output parameters derived from said digital signal stream, said values corresponding to said voltage and current measurements; and

    said logic unit is adapted for updating the value of each of the output parameters contained in the register as required in response to said digital signal stream.